

Response to Official Action of July 16, 2008
Application No.: 10/572,576
Examiner: Wilson, Lee D.
Art Unit: 3723

REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars.

1. Priority

The applicants respectfully request acknowledgement of the claim for priority to Japanese application no. 2003-350331, filed on October 9, 2003, in the next Office communication. A claim for priority was timely filed on March 17, 2006 via listing of the Japanese application no. 2003-350331 on the Application Data Sheet, and the corresponding filing of the certified copy of the priority document with the International Bureau.

2. Interview of September 17, 2008

The applicants are appreciative of the opportunity to discuss the pending application with the examiner on September 17, 2008. During the interview, the subject matter of the pending claims 1-4 in with regard to the rejection in view of U.S. patent no. 6,604,738 (*Haruna*) were discussed.

During the interview, the examiner agreed that claim 9, from which claims 10-14 depend, is considered to be allowable for reciting a plurality of slide portions that are opposed to each other in a second direction across a plug member and are movable in a first direction substantially orthogonal to the opposed second radial direction, and further are driven to diametrically expand in the second radial direction.

The examiner further indicated that claim 1, which recites a plurality of slide portions that are opposed to each other in a second direction across a plug member and are movable in a first direction substantially orthogonal to the opposed second radial direction, and further are driven to diametrically expand the a pressing member in the second radial direction, would likely not be patentable, at least in view of two publications, listed below, not currently of record.

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The applicants respectfully request that the examiner list U.S. patent no. 7,382,145 (*Thurmaier*) and U.S. publication no. 2006/0226591 (*Yonezawa*) on a Form PTO-892 in the next Office communication.

Following the interview, the applicants have had an opportunity to review the *Thurmaier* patent and the *Yonezawa* publication. Since each of the *Thurmaier* patent and the *Yonezawa* publication were published after the filing date of the PCT application (PCT/JP2004/013736, filed September 21, 2004) from which the pending application is a national stage filing under 35 U.S.C. § 371, they cannot qualify as prior art under 35 U.S.C. § 102(b). Further, since the filing date of each of the *Thurmaier* patent and the *Yonezawa* publication is after the priority date of the Japanese application no. 2003-350331 (filed on October 9, 2003) from which the pending application claims priority under 35 U.S.C. § 119, they also cannot qualify as prior art under 35 U.S.C. § 102(e).

Therefore, for at least these reasons, it is respectfully submitted that claim 1 is patentable in view of each of the *Thurmaier* patent and the *Yonezawa* publication.

3. Rejection of claims 1-14 under 35 U.S.C. § 102(b) as being anticipated by U.S. patent no. 6,604,738 (*Haruna*)

Reconsideration of this rejection is respectfully requested with respect to claim 1 on the basis that the *Haruna* patent fails to disclose each and every recited element of pending claim 1. The remaining claims 2-8 depend from claim 1, and are therefore patentable as containing all of the recited elements of claim 1, as well as for their respective recited features.

As discussed above, it was agreed during the interview of September 17, 2008 that claim 9 is considered to be patentable. The remaining claims 10-14 depend from claim 9, and are therefore patentable as containing all of the recited elements of claim 9, as well as for their respective recited features.

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By way of review, the embodiment of pending claim 1 requires a positioning apparatus having a plug member projected from a first block and inserted into a positioning hole formed in a second block. A plurality of slide portions that are opposed to each other in a second radial direction across the plug member are arranged around the plug member in a manner so as to be movable in a first radial direction that is substantially orthogonal to the opposed second radial direction. A diametrically expandable and contractible annular pressing member is arranged around an outer periphery of the slide portions. A drive arrangement drives the slide portions to diametrically expand the pressing member in the second radial direction and to press the pressing member against a peripheral surface of the positioning hole, wherein the slide portions are moved in the first radial direction.

As discussed in detail during the interview of September 17, 2008, an exemplary illustration of an embodiment according to pending claim 1 is shown in Figs. 2 and 3 of the application as originally filed. In Figs. 2 and 3, the plurality of slide portions is identified as elements 61, which are opposed to each other in a second radial direction D2 across a plug member 12. The slide portions 61 have inner slide surfaces 63 that cooperate and engage outer slide surfaces 64 on the plug member 12. With this configuration, as shown in Fig. 3, the slide portions 61 can move in the first radial direction D1, orthogonal to the second radial direction D2, in order to accommodate misalignment between the axes of a positioning hole 5 and the plug member 12.

Further, the slide portions include inclined outer surfaces 13, which cooperate with a drive mechanism to cause the pressing member (sleeve 15) to diametrically expand (via tapered engagement of inner inclined surfaces 17, which engage the inclined outer surfaces 13 of the slide portions 61).

As discussed in detail below, the *Haruna* patent fails to disclose at least a plurality of slide portions that are opposed to each other in a second radial direction

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across the plug member and arranged around the plug member in a manner so as to be movable in a first radial direction that is substantially orthogonal to the opposed second radial direction, and a drive arrangement that drives the slide portions to diametrically expand the pressing member in the second radial direction, all as required by pending claim 1.

The *Haruna* patent discloses a clamping apparatus for aligning and fixing a movable member M to a reference member R (col. 1, lines 42-45). The movable member M includes a positioning hole 12 for receiving a plug portion 21 (col. 1, lines 45-51). Formed with the plug portion is structure (hole 21a, transmission sleeve 31, hole 31a, engaging members 34) for engaging, retracting, and holding a pull rod 13 positioned in the positioning hole 12 (col. 1, lines 62-67). An annular shuttle member 23 is arranged between the plug portion 21 and the positioning hole 12 to provide an aligning guide for the movable member (col. 1, lines 52-54; col. 2, lines 28-30).

The plug portion 21 of the *Haruna* patent is integrally formed with a cover block 16 that is fixed to the reference member R (col. 4, lines 64-65; col. 5, lines 29-30). The hole 21a of the plug portion 21 for receiving the pull rod 13 therein includes a slant pushing surface 37 in correspondence with the engaging members, balls 34 for achieving proper movement of the balls 34 for engaging and locking (col. 5, line 66 through col. 6, line 2; col. 7, lines 28-31).

As noted above, the *Haruna* patent fails to disclose at least a plurality of slide portions that are opposed to each other in a second radial direction across the plug member and arranged around the plug member in a manner so as to be movable in a first radial direction that is substantially orthogonal to the opposed second radial direction, and a drive arrangement that drives the slide portions to diametrically expand the pressing member in the second radial direction.

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The Office action indicates on page 2 that the slant pushing surface 37 of the *Haruna* patent is considered to be the slide portions recited in pending claim 1. This characterization of the slant pushing surface 37 is inaccurate.

Firstly, a single slant pushing surface 37 is disclosed that extends around the inner portion of the plug portion 21 that defines the hole 21a. Thus, in contrast to pending claim 1, the *Haruna* patent discloses a single slant pushing surface 37, and not a plurality of slide portions opposed to each other in a radial direction across a plug member.

Secondly, as discussed above, the slant pushing surface 37 is formed on an inner surface of the plug portion 21, which is formed as part of cover block 16, which is fixed to the reference member R. Thus, since the plug portion and cover block are fixed, the slant pushing surface 37 is also fixed. Since the slant pushing surface is fixed, it does not move in a first radial direction, as is required of the slide portions in pending claim 1.

Thirdly, since the slant pushing surface is fixed, there is no drive arrangement that drives the slant pushing surface to diametrically expand an annular pressing member, as required by pending claim 1. This is particularly true in view of the construction of the Office action on page 2, in which the plug portion 21 is equated to the annular press member of pending claim 1. As previously discussed, the plug portion 21 is fixed and thus, the slant pushing surface 37 cannot cause the plug portion 21 to diametrically expand.

Thus, in view of the above, the *Haruna* patent fails to disclose at least a plurality of slide portions that are opposed to each other in a second radial direction across the plug member and arranged around the plug member in a manner so as to be movable in a first radial direction that is substantially orthogonal to the opposed second radial direction, and a drive arrangement that drives the slide portions to

diametrically expand the pressing member in the second radial direction, all as required by pending claim 1.

Even if the engaging members 34 of the *Haruna* patent are considered to be slide portions arranged opposed to each other in an opposed direction, and are moveable, the engaging members 34 of the *Haruna* patent move in the *same* direction as the opposed direction, and not in a radial direction *substantially orthogonal* to the opposed direction, as required by amended claim 1 (Figs. 1-4; col. 5, lines 57-65; col. 7, lines 29-49). Specifically, in referring to Fig. 1 of the *Haruna* patent, the engaging members 34 are opposed to each other in the left and right direction as shown in the Figures, and the engaging members 34 also move in the left and right direction (Figs. 1-4). The engaging members do not, however, move in a radial direction substantially orthogonal to the opposed direction (which would be into and out of the page). Thus, the *Haruna* patent fails to disclose at least a plurality of slide portions opposed to each other across a plug in an opposed direction and arranged for movement in a first radial direction substantially perpendicular to the opposed direction, as required by pending claim 1.

Additionally, it would not have been an obvious modification for a person having ordinary skill in the art at the time the invention was made to alter the direction in which the engaging members 34 move. Specifically, a skilled artisan would not have switched the direction that the engaging members 34 move to be from the opposed direction (corresponding to the recited second opposed radial direction) to a direction orthogonal to the opposed direction (corresponding to the recited first radial direction). Such a modification would destroy the function of the engaging members 34 of the *Haruna* patent, since if the engaging members 34 of the *Haruna* patent did not move in the opposed direction, they would not engage the slant surface 37 and the pull rod 13 to clamp the movable member M with the reference member R. Thus, the entire clamping function of the clamping apparatus of the *Haruna* patent

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would be destroyed, and a skilled artisan would not modify a clamping apparatus in such a manner that the clamping function is destroyed.

Further, since the plug portion 21 is fixed, the engaging members 34 do not cause the plug portion 21 (which the Office action considers to be an annular pressing member) to diametrically expand, as is required by pending claim 1.

Even if the shuttle 23 is considered to be a pressing member, as can be seen in Figs 1-4 of the *Haruna* patent, the shuttle member 23 is separated from the engaging members 34 by the plug 21. Since the shuttle member 23 is separated from the engaging members 34 by the plug 21, the shuttle member 23 is also not diametrically expanded by the engaging members 34. Accordingly, since the shuttle member is not expanded by the engaging members, the shuttle member is clearly not diametrically expanded by the engaging members, and cannot satisfy the recitation in pending claim 1 of slide portions causing the annular pressing member to diametrically expand.

Further, the *Haruna* patent discloses plug member 21 positioned outside the engaging members 34 and inside the shuttle member 23 (Figs. 1-4). This arrangement is in clear contrast to the order of elements of plug, slide portions, and pressing member, as recited in pending claim 1. Thus, the *Haruna* patent fails to disclose the specific order of the plug, slide portions, and pressing member, as recited in pending claim 1.

In view of at least the above mentioned deficiencies, the *Haruna* patent fails to disclose every element recited in pending claim 1 and withdrawal of this rejection is respectfully requested.

As mentioned above, applicants submit that independent claim 1 is patentable and therefore, claims 2-8, which depend from claim 1, are also considered to be patentable as containing all of the elements of claim 1, as well as for their respective recited features.

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4. Conclusion

In view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is respectfully requested that every pending claim in the present application be allowed and the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the applicants' attorney, the examiner is invited to contact the undersigned at the numbers shown below.

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Respectfully submitted,
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